



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,802	11/15/2006	Rolf Cremerius	66969-0003	6136
84362	7590	10/29/2009		
GKN Driveline/ITG c/o Kristin L. Murphy 39533 Woodward Avenue, suite 140 Bloomfield Hills, MI 48304			EXAMINER	
			JENNISON, BRIAN W	
			ART UNIT	PAPER NUMBER
			3742	
			MAIL DATE	DELIVERY MODE
			10/29/2009 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,802

Applicant(s)

CREMERIUS ET AL.

Examiner

BRIAN JENNISON

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 and 13-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 13-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 4/17/2009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

1. Applicant's arguments with respect to claims 2, 12-30 have been considered but are moot in view of the new ground(s) of rejection.
2. In response to applicant's arguments on pages 9 and 10 against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Brenner is not relied upon for the 102b rejection of claim 2 and is also not relied upon for its teachings of heating. Claims 22, 23, 25-26 involve wall thickness, ductility and being free of cracks. Brenner is relied upon for these teachings as reiterated below. Applicant's argument on page 9 only confirms Clarke's teachings of producing a weld seam without secondary heating.

Keher is not relied upon for the rejection of Claim 2, rendering this argument moot in light of the new ground of rejection for claim 2 below, and is only argued based on the amended claims.

In regards to applicant's comments on Page 5 of the reply in regards to the Examiner taking of official notice; no official notice was taken in the office action dated 3/30/2009. All rejections are accompanied by citations from the prior art.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. **Claims 2, 13-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al in view of Brenner et al.**

Clarke teaches:

Regarding Claim 2: A process for joining components for torque transmission in a vehicle, the components being made from hardenable steel and having a material thickness, **(A method for welding hardenable steel which can be components in a torque transmission. See Col. 2, Line 35 and Fig. 2 for material thickness at 26)** by producing a weld seam without secondary heating, **(no preheating or secondary heating is needed. See Column 4, Lines 46-51)** comprising:
positioning a welding electrode with respect to a weld line;
applying a voltage;
supplying a plasma gas;
forming an arc; and **(A plasma arc, using a plasma gas, is formed after an electrode**

is positioned and a voltage is applied. See Column 1, Lines 20-23)

melting the steel in the vicinity of the weld line over the entire material

thickness. **(Melting occurs in the vicinity of the weld line. See Column 1, Lines 24-28.)** An energy per unit length of 196 J/mm as stated by applicant meaning $1\text{ kW/mm} = 42.66\text{ J/mm}$

Clarke fails to teach:

Regarding Claim 2: energy per unit length is 234 J/mm to 3360 J/mm.

Brenner et al teaches:

Regarding Claim 2: A power of 65kW meaning an energy per unit length of 2772 J/mm. **See Column 4, Lines 35-45.**

Clarke discloses the claimed invention except for an energy per unit length is 234 J/mm to 3360 J/mm. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use an energy per unit length is 234 J/mm to 3360 J/mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. (In re Aller, 105 USPQ 233.)

Clarke also teaches:

Regarding Claim 13: This process is capable of welding hardenable steel having a thickness of 2.0 mm to 10.0 mm. furthermore, It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense and not amount to the mere claiming of a use of a particular structure (Ex. Parte Pfeiffer, 1962 C.D. 408 (1961). Claim 13 is not given patentable weight.

Regarding Claims 14, 15: Fig 4 shows the weld joint to be a single layer design.

Regarding Claims 16, 17: A butt seam may be welded in the metal. **See Column 1, Lines 55-57.**

Regarding Claims 18, 19: Welding was performed at a rate of 1.4m/minute, which is at least 0.2 m/min.

Regarding Claim 20: The weld seam 114 shown in Fig 3. is a radial circumferential seam, around the gear 112.

Regarding Claim 21 (as best understood): The weld seam is made between a gear 112 and a shaft 116 (**See Column 8, Lines 60-65**) which are included in the parts of a torque transmission welded by the method involving no secondary heating, (**See Column 4, Lines 46-51**) when a plasma arc is formed after an electrode is positioned and a voltage is applied. (**See Column 1, Lines 20-23**) Melting occurs in the vicinity of the weld line. (**See Column 1, Lines 24-28.**)

Regarding Claims 22-23: The hollow shaft **See Fig 3.**

Regarding Claim 24: Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. **See Column 3, Lines 27-31.**

Regarding Claim 25: Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. **See Column 3, Lines 27-31.**

Clarke fails to teach:

Regarding Claims 22-23: the wall thickness in the range of 2.0 mm to 10.0 mm.

Regarding Claim 26: a join comprising ductility in the range from 250HV to 650HV.

Brenner teaches:

Regarding Claims 22-23: The parts have a 3.0 mm thickness. **See Column 4, Lines 1-5.**

Regarding Claim 26: The welding seam has an average hardness of 280HV.

In view of Brenner et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Clarke et al, the wall thickness and the ductility range since, Brenner teaches a thickness of 3.0mm which is merely a change in size and is recognized as being within the skill of one having ordinary skill in the art. and a hardness or ductility of 280HV for inhibiting cracks in the weld.

5. Claims 27-30 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke as modified by Brenner in further view of Kehr.

The teachings of Clarke as modified by Brenner have been discussed above.

Clarke as modified by Brenner fails to teach:

Regarding Claims 27, 28: A vehicle comprising an engine with a drive system, wherein the drive system includes components for torque transmission, and at least two components have been welded to one another by a process according to Claim 2, 18.

Regarding Claims 29, 30: A vehicle comprising at least two components made from hardenable steel and connected by a joint comprising a weld seam produced by a process according to Claim 2, 18.

Kehrer teaches:

Regarding Claims 27-30: Paragraph [0002] states the parts being welded may be part of a vehicle such as a transmission with two parts being welded together. Paragraph [0011] discloses these parts made from hardenable steel may be joined by plasma welding.

In view of Kehrer's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Clarke, the two components joined by a plasma welding process since, Kehrer teaches that two hardenable steel parts of a vehicle or transmission may be welded using a plasma welding process for improved thermal and metallurgical properties of the weld seam.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BRIAN JENNISON** whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 3742

10/20/2009

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742